

10/564,742
G12-197996C/KK

6

REMARKS

Entry of this Amendment is proper because it narrows the issues on appeal and does not require further searching by the Examiner.

Claims 1-8 and 13-21 and 23-24 are all of the claims pending in the present Application. Claims 6-8 and 19-20 have been withdrawn. Claims 1 and 24 have been amended. Claim 22 has been canceled.

While the claim amendments made herein may help to distinguish the invention over the prior art, Applicant's intention in making the amendments is for the purpose of particularly pointing out the invention, and not for the purpose of distinguishing the invention over the prior art, narrowing the claims, or for any statutory requirements of patentability. Further, notwithstanding any claim amendments made herein, Applicant's intent is to encompass equivalents of all claim elements, even if amended herein or later during prosecution.

Claims 22 and 24 stand rejected under 35 U.S.C. § 112, first paragraph as allegedly failing to comply with the written description requirement. Although Applicant disagrees with the Examiner and submits that these claims fully comply with 35 U.S.C. § 112, first paragraph, Applicant notes that claims 22 has been canceled and claim 22 has been amended to replace "present other than as a dopant in said base particles" with "not incorporated in said base particles" (Application at page 38, lines 16-24). In view of the foregoing, the Examiner is respectfully requested to withdraw this rejection.

Claims 1 and 22-24 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by Kweon et al. (U. S. Patent No. 6,569,569).

Claim 21 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kweon.

Claim 1-5 and 13-18 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Shiozaki (WO 03/044881) in view of Park et al. (U. S. Patent No. 6,291,103).

These rejections are respectfully traversed in the following discussion.

10/564,742
G12-197996C/KK

7

I. THE CLAIMED INVENTION

An exemplary embodiment of the claimed invention, as set forth in independent claim 1, is directed to a positive active material including base particles able to dope and release lithium ions, and at least one element selected from the group consisting of Gd, La, Ce and Yb on at least part of a part of the base particles which is able to come into contact with an electrolyte.

Importantly, the at least one element is formed on a surface of the base particles, and is not incorporated in the base particles (Application at page 38, lines 16-24; page 39, line 25-page 40, line 5).

Conventional positive active materials include base particles (e.g., LiCoO₂). Attempts have been made to modify a surface of these materials with an element of a different kind (e.g., aluminum) to improve electron conductivity. However, this method does not inhibit the oxidative decomposition of the electrolyte in a positive-electrode field (Application at page 2 lines 11-20).

In the claimed invention, on the other hand, the at least one element is formed on a surface of the base particles, and is not incorporated in the base particles (Application at page 38, lines 16-24; page 39, line 25-page 40, line 5). This feature may help to inhibit a reaction between the electrolyte and the positive active material and, thus, inhibit a deterioration of performance of a battery (Application at page 11, line 1-page 12, line 9).

II. THE ALLEGED PRIOR ART REFERENCES

A. Kweon

The Examiner alleges that Kweon teaches the invention of claims 1 and 22-24 and makes obvious the invention of claim 21. However, Applicant respectfully submits that there are features of the claimed invention which are not taught or suggested by Kweon.

In particular, Applicant submits that Kweon does not teach or suggest "*wherein said at least one element is formed on a surface of said base particles, and is not incorporated in said base particles*", as recited in claim 1 and similarly recited in claim 24 (Application at page 38, lines 16-24; page 39, line 25-page 40, line 5). As noted above, this feature may help to inhibit a

10/564,742
G12-197996C/KK

8

reaction between the electrolyte and the positive active material and, thus, inhibit a deterioration of performance of a battery (Application at page 11, line 1-page 12, line 9).

Clearly, Kweon does not disclose or suggest these features.

Indeed, Kweon simply teaches a positive active material including $\text{LiNi}_{1-x}\text{Co}_x\text{M}_y\text{O}_2$ powder, where M may be La or Ce (Kweon at Abstract). The Examiner attempts to equate the La and Ce in the positive active material of Kweon with the "at least one element" of the claimed invention. This is completely unreasonable. In fact, in the composition of Kweon, the La or Ce element is incorporated in the $\text{LiNi}_{1-x}\text{Co}_x\text{M}_y\text{O}_2$ powder (e.g., is a part of the powder itself).

That is, nowhere does Kweon teach or suggest at least one element which is selected from the group consisting of Gd, La, Ce and Yb and is formed on a surface of the base particles, and is not incorporated in the base particles, as in the claimed invention.

Therefore, Applicant respectfully submits that Kweon does not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. Shiozaki and Park

The Examiner alleges that Shiozaki would have been combined with Park to form the invention of claims 1-5 and 13-18. However, Applicant respectfully submits that these alleged references would not have been combined and even if combined, the alleged combination would not teach the features of the claimed invention.

In particular, Applicant respectfully submits that these references are unrelated. Indeed, no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Applicant submits that the references provide no motivation or suggestion to urge the combination as alleged by the Examiner. Indeed, these references clearly do not teach or suggest their combination. Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

10/564,742
G12-197996C/KK

9

Moreover, neither Shiozaki, nor Park, nor any alleged combination thereof teaches or suggests "*wherein said at least one element is formed on a surface of said base particles, and is not incorporated in said base particles*", as recited in claim 1 and similarly recited in claim 24 (Application at page 38, lines 16-24; page 39, line 25-page 40, line 5). As noted above, this feature may help to inhibit a reaction between the electrolyte and the positive active material and, thus, inhibit a deterioration of performance of a battery (Application at page 11, line 1-page 12, line 9).

Clearly, these features are not taught or suggested by Shiozaki or Park.

Indeed, the Examiner essentially concedes on page 5 of the Office Action that Shiozaki does not teach or suggest this element.

[As an aside, Applicant notes that the Examiner shows a ternary phase diagram as described in Shiozaki on page 7 of the Office Action and also states that "Shiozaki further discloses that the positive active material may comprise LiCoO₂ which corresponds to point A on fig. 1." on page 6 of the Office Action. However, the Examiner's position is incorrect. The point "A" on the ternary phase diagram on page 7 is a point corresponding to LiMn_{0.3}Ni_{0.5}O₂, but not a point corresponding to LiCoO₂. The point corresponding to LiCoO₂ is a bottom-left corner of the ternary phase diagram. Accordingly, the LiCoO₂ falls outside the composition range which is present on the perimeter of or inside the quadrilateral ABCD shown in the ternary phase diagram as a claim scope of Shiozaki.]

In addition, the Examiner states that "Shiozaki et al. further disclose that a positive active material wherein a=0.3, b=0.3, c=0.4 and 0.95<x<1.35." and also fills a point of a=0.3, b=0.3, c=0.4 in the ternary phase diagram shown on page 7 of the Office Action. The point corresponds to LiMn_{0.3}Ni_{0.3}Co_{0.4}O₂. However, Applicant cannot understand how the use of this point supports the Examiner's ground of rejection (e.g., is the point used for the purpose of asserting the obviousness of claim 5 of the present application). Further, Applicant notes that LiMn_{0.3}Ni_{0.3}Co_{0.4}O₂ is not used in the working examples of the present application, either.]

However, the Examiner alleges that Park makes up for the deficiencies of Shiozaki. This is clearly unreasonable.

10/564,742
G12-197996C/KK

10

Indeed, Park simply teaches an $\text{LiNi}_{0.88}\text{Co}_{0.1}\text{La}_{0.22}\text{O}_2$ active material (Park at Example 2, col. 4, line 58) or $\text{LiNi}_{0.88}\text{Co}_{0.1}\text{La}_{0.22}\text{O}_2$ active material powder (Park at Example 8, col. 5, line 55). The Examiner attempts to equate the La and Ce in the active material of Park with the "at least one element" of the claimed invention. This is completely unreasonable. In fact, in the composition of Park, as in Kweon, the La or Ce element is incorporated in the $\text{LiNi}_{0.88}\text{Co}_{0.1}\text{La}_{0.22}\text{O}_2$ active material or $\text{LiNi}_{0.88}\text{Co}_{0.1}\text{La}_{0.22}\text{O}_2$ active material powder (e.g., is a part of the active material itself).

That is, like Kweon, nowhere does Park teach or suggest at least one element which is selected from the group consisting of Gd, La, Ce and Yb and is formed on a surface of the base particles, and is not incorporated in the base particles, as in the claimed invention.

Therefore, Park clearly does not make up for the deficiencies of Shiozaki.

Therefore, Applicant respectfully submits that these alleged references would not have been combined and even if combined, the combination would not teach or suggest each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to withdraw this rejection.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1-8, 13-21 and 23-24, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

10/564,742
G12-197996C/KK

11

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

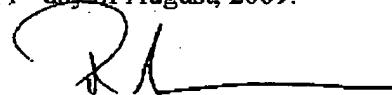
Date: 8/11/09


Phillip E. Miller, Esq.
Registration No. 46,060

McGinn IP Law Group, PLLC
8321 Old Courthouse Road, Suite 200
Vienna, VA 22182-3817
(703) 761-4100
Customer No. 21254

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that I am filing this Amendment Under 37 CFR §1.116 by facsimile with the United States Patent and Trademark Office to Examiner Jacob B. Marks, Group Art Unit 1795 at fax number (571) 273-8300 this 11th day of August, 2009.


Phillip E. Miller
Registration No. 46,060